

What is claimed is:

1. A dual phone, comprising:  
an integrated service digital network (ISDN) phone unit;  
an IP phone circuit unit; and  
5 a control unit which recognizes an ISDN mode, an IP mode, or  
an external connection mode by analyzing input data and controls  
a voice signal path between the ISDN phone unit and the IP phone  
unit based on the recognized mode.

10 2. The dual phone of claim 1, further comprising:

a connecting unit which switches the voice signal path  
between the ISDN phone circuit unit and the IP phone unit and  
performs data exchange between the ISDN phone unit and the IP  
phone unit.

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3. The dual phone of claim 1, wherein the ISDN phone unit  
comprises:

an interface for establishing a connection with the ISDN;  
a high-level data link controller (HDLC) for  
20 framing/deframing data from the interface; and  
a first microprocessor which generally controls the ISDN  
phone unit and transports the deframed data to the IP phone unit.

4. The dual phone of claim 3, wherein the ISDN phone unit further comprises:

a first codec (coder/decoder) which converts frame data from the interface into a voice signal and converts an externally 5 input voice signal into pulse code modulation (PCM) data; and

a handset/speaker phone unit for inputting/outputting the voice signal to/from the first codec under the control of the first microprocessor.

10 5. The dual phone of claim 2, wherein the connecting unit comprises:

a data communication unit for exchanging data between the IP phone unit and the ISDN phone unit;

15 a voice signal connecting unit for switching a path of the voice signal between the ISDN phone unit and the IP phone unit based on a control signal from the control unit; and

a key input unit for transporting key input data input from a user to the control unit.

20 6. The dual IP phone of claim 5, wherein the data communication circuit unit comprises a serial port.

7. The dual phone of claim 5, wherein the data communication unit comprises a bi-directional memory.

8. The dual phone of claim 5, wherein the connecting unit further comprises:

a hook on/off switch; and

5 a display unit for providing a visual display under control of the control unit.

9. The dual phone of claim 1, wherein the IP phone unit comprises:

10 a second microprocessor which controls a calling party of the recognized external connection mode to generate a dial tone;

a second codec for simultaneously/independently converting voice signals input from the ISDN phone and external devices into PCM data; and

15 a digital signal processor (DSP) which generates and provides to the calling party the dial tone under control of the second microprocessor, receives and format-converts data from the second codec, and provides the converted signal to the second microprocessor.

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10. The dual IP phone of claim 9, wherein the second codec has two voice signal paths.

11. The dual phone of claim 10, wherein the voice signal in the IP mode and external connection mode is input to different voice signal paths, respectively.

5 12. The dual phone of claim 1, wherein the IP phone unit includes a connector for establishing a connection with the Internet.

10 13. The dual phone of claim 12, wherein the IP phone unit includes a connector for establishing a connection with a computer.

15 14. A method of telecommunicating using a dual phone in which an integrated service digital network (ISDN) phone unit and an IP phone unit are included in a single device, comprising:

selecting at least one of an ISDN mode, an IP mode, and an external connection mode;

20 if a user of an external ISDN phone requests an origination call in the external connection mode, connecting a data and voice signal path between the ISDN phone and the IP phone;

confirming whether the user is an authenticated subscriber based on information regarding a called party and a password input from the user; and

if the user is the authenticated subscriber, confirming an IP address of the called party based on the called party information and connecting the user and a terminal of the confirmed IP address by transmitting the origination call to the 5 terminal of the IP address.

15. The method of claim 14, further comprising:

providing a dial tone to an external connection requester after automatic connection is established between the ISDN phone 10 unit and the IP phone unit; and

inputting the password and a destination phone number of the called party after the dial tone.

16. The method of claim 14, further comprising:

15 simultaneously coding voice signals from the external connection requester and external device of the dual IP phone unit if the IP mode and the external connection mode are set;

converting coded data into a standard data format for the respective called party; and

20 selectively storing the data format to match data transmission rates between the external connection requester and the called party of the IP address.

17. A method for processing calls in a phone which includes an ISDN phone unit and an Internet phone unit, comprising:

receiving a signal selecting a mode of operation of the phone; and

5 automatically establishing a voice path between the Internet phone unit and the ISDN phone unit in said selecting mode when a user enters an external connection request with the call party.

18. The method of claim 17, a phone, comprising:

10 a first phone unit which operates in a first communications mode;

a second phone unit which operates in a second communications mode; and

15 a control unit which establishes a voice path between the first phone unit and the second phone unit based on a user mode selection signal.

19. The phone of claim 18, wherein the first communication mode is an ISDN mode and the second communications mode is an IP mode.

20. The phone of claim 18, wherein the control unit activates one of the first phone and the second phone unit and

de-activates the other of the first phone unit and the second phone unit in response to another user mode selection signal.